

**THE INSECT COMPLEX INHABITING GALLS FORMED BY
CECIDOMYIA ACACIAELONGIFOLIAE SKUSE (DIPTERA:
CECIDOMYIIDAE) ON BLACKWOOD (*ACACIA MELANOXYLON*)
IN TASMANIA**

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Abstract

Cecidomyia acaciaelongifoliae Skuse is newly recorded from Tasmania, where it forms galls on blackwood, *Acacia melanoxylon*, a new host record. Five species of Lepidoptera and four species of Hymenoptera were found to be associated with the galls.

Introduction

Blackwood, *Acacia melanoxylon* R. Br. (Mimosaceae), is a valued timber tree, endemic to eastern Australia and Tasmania and introduced to other countries such as South Africa and New Zealand. The timber is the basis of an important furniture and veneer industry in Tasmania and the expansion of the blackwood estate through plantation development has been an important development in adding value to Tasmania's forest industry. As a tree species it has few insect pests of significance to growth increment (Jennings 1991). In New Zealand, 18 species of insects have been recorded feeding on blackwood (Appleton and Walsh 1997).

Flower bud gall formation on blackwood has not been recorded previously from Tasmania (Bashford 2004), although *Trichilogaster acaciaelongifoliae* (Froggatt) (Hymenoptera: Pteromalidae) galls have been reported on blackwood in South Africa (Dennill *et al.* 1993). Froggatt (1923) described the wattle gall-fly, *Cecidomyia acaciaelongifoliae* Skuse, as being common on the foreshores of Sydney Harbour, NSW, on long-leaved wattles. McKeown (1942) reported *C. acaciaelongifoliae* attacking the flower buds of several *Acacia* species in New South Wales, causing a twisted mass of green tubes which later turned brown as they dried.

Materials and methods

Galls were initially collected in March 2000, from several blackwood trees growing in Lauriston Reserve near George Town in northern Tasmania. Both green (Fig. 1) and dried, brown galls were collected in January and February 2001. The galls were placed in paper bags and transferred to laboratories in Hobart the same day. The galls were then placed individually into plastic food containers with perforated lids to prevent condensation. The containers were placed in a controlled temperature room at 18°C and examined weekly for insect emergence. Single, galled blackwood trees were also detected in recreational parks at Burnie and Deloraine. All infested trees located were exposed trees in open situations. Routine surveys of blackwood plantations by Forest Health officers found no other evidence of galled plants.

Specimens of the cecidomyiid fly and hymenopteran parasitoids reared from the galls were sent to the Australian National Insect Collection in Canberra for identification.



Fig. 1. Developing galls on *Acacia melanoxylon* in Tasmania, caused by *Cecidomyia acaciaelongifoliae*.

Results

The ten insect species reared from the galls are listed in Table 1. Apart from *Cecidomyia acaciaelongifoliae*, five species of Lepidoptera and four species of Hymenoptera were recorded.

Discussion

Cecidomyia acaciaelongifoliae is newly recorded from Tasmania and *Acacia melanoxylon* is a new host record.

All Lepidoptera species emerging from the galls were recorded from other *Acacia* galls in previous studies (Bashford 2002, 2004). Of the four species of Hymenoptera recorded, the ichneumonid *Glabridorsum stokesii* (Cameron) is a common parasitoid of Lepidoptera larvae inhabiting galls in Tasmania. Platygasterids are mainly parasitoids of cecidomyiids (Masner 1993, J. LaSalle pers. comm.) and species of *Torymoides* Walker (Torymidae) are known mainly from dipteran galls, including those caused by cecidomyiids (J. LaSalle pers. comm.). Species of *Sierola* Cameron (Bethyilidae) have been reared from other types of gall on *Acacia* species in Tasmania, usually associated with lepidopteran inquiline (Bashford 2004).

The large number and unusual structure of the galls found on the affected trees in Tasmania caused shoot dieback and reduced seed production markedly. Any biotic agent that has an impact on growth increment and form needs to be identified and its impact risk factored into growth models. The establishment of plantations off-site may result in an increase in biotic loads, especially if trees are under stress, and knowledge of insect pests and diseases is an important component in developing high quality sustainable timber products. Records of insect pests that have the potential to become a problem in a rapidly increasing blackwood plantation estate are of value in determining management decisions.

Table 1. Insect species reared from flower bud galls formed by *Cecidomyia acaciaelongifoliae* on *Acacia melanoxylon* in Tasmania.

Insect species	Family	Number of specimens
DIPTERA		
<i>Cecidomyia acaciaelongifoliae</i> Skuse	Cecidomyiidae	237
LEPIDOPTERA		
<i>Erechthias mustacinella</i> (Walker)	Tineidae	66
<i>Opogona comptella</i> (Walker)	Tineidae	3
<i>Polysoma eumetalla</i> (Meyrick)	Gracillariidae	6
<i>Stathmopoda chalcotypa</i> Meyrick	Oecophoridae	22
<i>Macrobathra</i> sp.	Cosmopterigidae	3
HYMENOPTERA		
<i>Glabridorsum stokesii</i> (Cameron)	Ichneumonidae	12
<i>Sierola</i> sp.	Bethylidae	32
<i>Torymoides</i> sp.	Torymidae	154
Genus and species indet.	Platygasteridae	287

Acknowledgements

I thank Dr John LaSalle at the Australian National Insect Collection for his help in examining the Hymenoptera and Dr Don Colless for confirming the identification of the cecidomyiid gall former. I also thank Comalco Aluminium (Bell Bay) Limited for allowing access to trees in Lauriston Reserve.

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